Review and Recommendations on the Valuation, Allocation and Sale of Crown Timber Resources In Nova Scotia

Prepared by AGFOR Inc.

December 2000

FINAL REPORT

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Presented to:

Nova Scotia Department of Natural Resources

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December 7, 2000

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1.0 INTRODUCTION

This assignment is an independent review of Nova Scotia's Crown Land tenure-of-supply arrangements and the baseline stumpage values for the various primary forest products produced in the province. The indexing systems used to maintain current values are considered. Based on this review, recommendations for setting Crown stumpage rates in the future are proposed.

Crown wood represents approximately 20% of the domestic industrial wood production in Nova Scotia. Small private woodlots produce 40% to 50% of the province's industrial wood supply. The balance of the wood supply is produced on large industrial freehold lands.

Over 98% of the wood provided to the forest industry from Nova Scotia's Crown Land is supplied under two types of tenure-of-supply agreements. The first type of agreement is a *Long-Term License and Management Agreement.* Two pulp and paper mills: Stora Enso and Kimberly-Clark (formerly Scott Maritimes) hold these licenses. Both of these long–term licenses were established through specific and separate Acts passed in the Nova Scotia Legislature. The second type of agreement is a ten-year *Volume Utilization Agreement* (as outlined in Section 32 of the Crown Lands Act). Twenty-two sawmills and one specialty wood processing facility hold Volume Utilization Agreements (VUA's). Both types of tenure-of-supply arrangement have a set of mandatory obligations and stumpage rates that the beneficiary must respect when harvesting wood on Crown Land. The remaining wood comes from a third, but much less important means of providing Crown wood to industry is through the use of tender sales

Crown wood allocations represent 10% to 30% of the wood supplied to the pulp and paper mills, although the Kimberly-Clark and Stora Enso licenses account for 70% of Nova Scotia's Crown wood supply. The various ten-year VUA holders capture between 3% and 10% of their wood supply with allocations from Crown Lands. VUAs account for approximately 28% of the Crown wood utilized by industry. Tender sales only represent approximately 2% of Crown wood supplied to industry.

Stumpage is defined as the price per unit paid to a landowner for standing merchantable wood. In the case of Crown Lands, the Province is considered the landowner and the stumpage is paid to the Province for the wood harvested by the beneficiaries of the Crown wood supply agreements. Crown stumpage rates are set with the intent of ensuring cost parity with the Fair Market Value (FMV) of wood harvested from the private woodlots of Nova Scotia. However, when assessing stumpage rates on Crown Lands, it is essential to consider the costs (to the beneficiary) associated with Crown forest management obligations.

The baseline for the current Crown stumpage rates was set, by the Province, following a 1987 report entitled: *A Review of Stumpage, Forest Management and Market Access* by F.L.C. Reed. Since which time stumpage has been adjusted annually based on forest products industrial indices.

2.0 TERMS AND METHODS

In accordance with the Terms of Reference (TOR) the following were identified as issues to be considered and addressed in this assignment:

1. Improved market access for privately produced wood

Private timber suppliers are to have a fair share of the available market for primary forest products. They shall receive a fair and reasonable return on products sold. It is essential that the valuation and allocation of Crown timber not impact negatively on private wood suppliers.

2. Wood sustainability regulations (Private Lands)

It is desirable that the Wood Sustainability Regulations (under the Forests Act) not prove to be a negative influence on the supply of privately produced wood.

3. Countervail measures exemption and impacts

Crown stumpage policies must be reflective of private markets. The forest products industry's cost of wood must be established by the domination of the private markets. These conditions are to be met if Nova Scotia is to minimize the risk of having countervail duty remedies being imposed, by the United States, on Nova Scotian wood products sold in the U.S.

4. Scaling and measurement, accounting

The system that is used by the Crown to scale and account for wood volume during Crown timber sales needs to be reviewed for suitability and clarity. The practice of grade-based pricing should be investigated, with some attention paid to the need for new product categories or specifications.

5. Tenure arrangements and methods of allocating the Crown resource

Review the merits of each of the existing tenure arrangements and when/how each should be used. The viability of competitive tender sales should also be examined.

6. Silviculturally treated stands

Those stands that have been treated under a silviculture program can be expected to have much lower operating costs. This is due to higher volume yields, uniform tree size, shape, grade of wood and the proximity to pre-existing roads. The feasibility of paying premium stumpage rates for such wood needs to be investigated.

7. Management Costs and Obligations,

Ensure that the obligations and costs of forest management (including those imposed as a result of New Integrated Resource Management) are properly addressed for the various Crown Land tenure types.

8. Changes to pricing policies, new baseline and indexing methods

Propose new baseline stumpage values and review existing pricing and indexing practices for all existing and/or proposed product groups and tenure agreements and demonstrate the consequences of changes to these items.

9. Value Added Products and Underutilized Species,

Suggest pricing policies to promote the use of underutilized species and the development of value-added wood product manufacturing.

10. Implementation and Administration Costs.

Recommendations are to be made on the best method of implementing any proposed changes without incurring excessive administrative cost on the part of the Crown.

11. Crown Timber Policies and Trade Objectives

Consideration is to be given to whether Crown timber policies are consistent with the Province's trade objectives and commitments (i.e. GATT, NAFTA, Federal/Provincial Agreement on Internal Trade, Canada/US Exclusion Agreement for Maritime Softwood Lumber, etc.).

2.1 Data Collection

This assignment was conducted between May 2000 and September 2000. A reference period of July 1, 1999 to November 30th, 1999 was used during the collection of quantitative data.

A review of literature pertaining to Nova Scotia's historical forest policy and associated issues was conducted as part of the review of background information for this report. A complete bibliography is provided in Appendix A. Several forest products indices used by Nova Scotia and other provinces to adjust Crown Land stumpage rates were also reviewed.

AGFOR Inc. interviewed over 70 people and organizations involved with the forest sector in Nova Scotia and other provinces.

Four types of interviews were conducted:

1) Interviews were held with Nova Scotia contractors, landowners and Group Ventures throughout the province: This information was used to determine the baseline Fair Market Value (or stumpage) paid to private woodlot owners;
2) Interviews with representatives of the forest industry, from those mills with Crown wood allocations and those without a Crown allocation, were conducted to ensure the entire province was covered;
3) Meetings were held with Regional and Provincial NSDNR representatives;
4) Government and industry representatives from New Brunswick, Prince Edward Island, Newfoundland and Quebec were contacted to provide some insight into the Crown tenure of wood supply and stumpage situation in each of those provinces.

2.2 Data Analysis

Baseline Fair Market Values

The province was divided into five market regions (See Figure 2.1). The interview data (collected by product and region) was compiled and tabulated. Three methods were used to determine provincial average Fair Market Values for standing timber on private land:

- A weighted average;
- A numerical average (based on the number of responses); or
- A residual calculation.

The Fair Market Value was calculated as a weighted average for each product group that had at least three representative price samples in all five regions. The region's total volume production (either softwood or hardwood) was used to generate a provincial weighted-average price.

The mathematical (or numerical) average was employed for those products that did not have representative price samples in all five regions; but were represented in at least three regions.

When a product was absent in the sampling of more than two of the market regions, a residual stumpage calculation was applied. This calculation is based on published, delivered or roadside prices minus operating costs. The operating costs were obtained during the interviews with various contractors. Adjustments were made for additional steps required to produce and market specialty products.

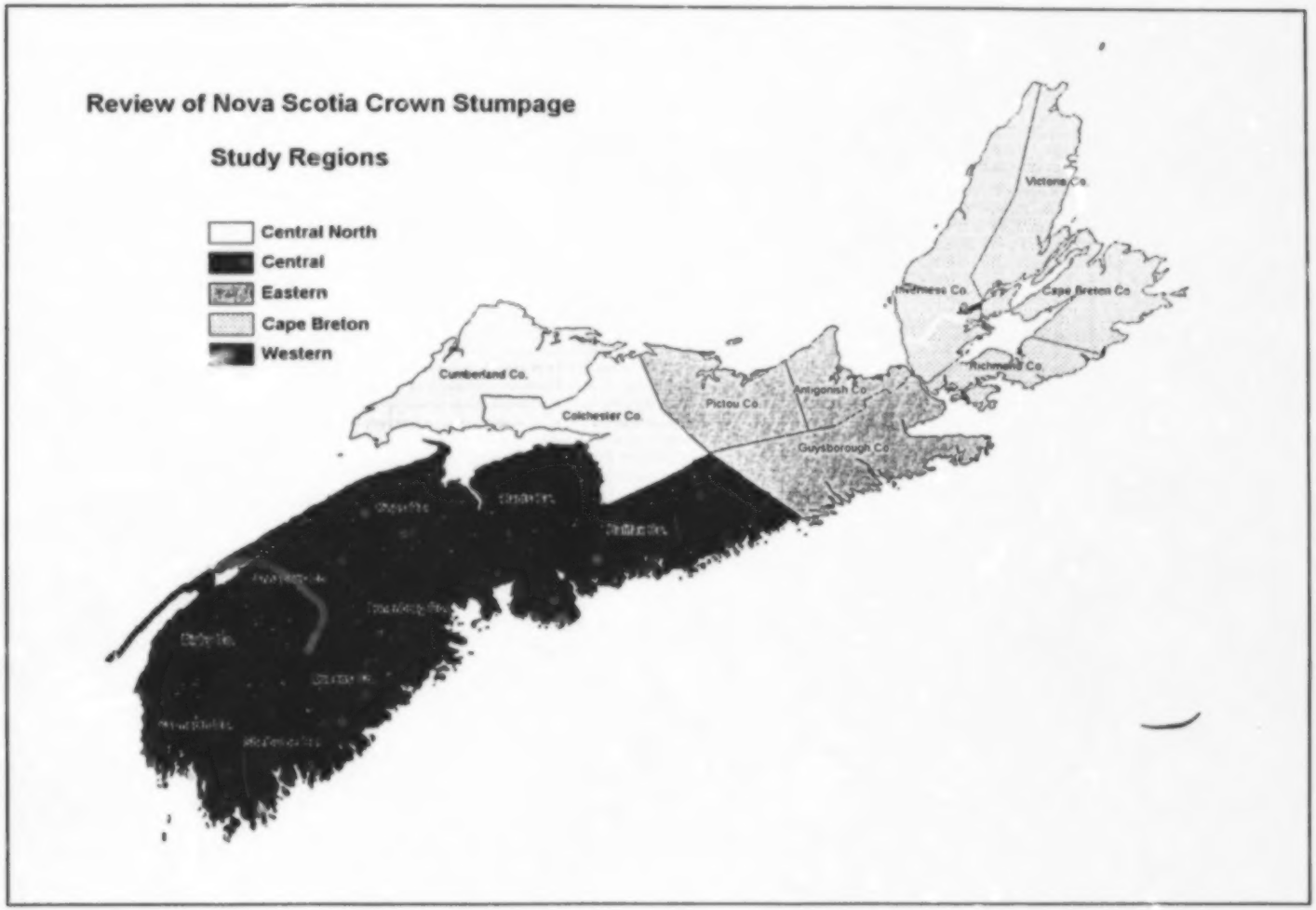

Figure 2.1 Nova Scotia's Five Market Regions

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Wood Supply Tenure/Allocation

Interviews were conducted with industry and government representatives. The resulting information was combined with similar data obtained from other provinces, and AGFOR Inc.'s own experience, to construct an overview of the Crown stumpage situation in Nova Scotia. The overview was used to formulate the observations, conclusions and recommendations given in this report.

2.3 Measures and Conversions

In order to maintain some consistency, accuracy and compatibility to data handling and processing AGFOR Inc. found it necessary to convert the data and information collected to a standard, solid-wood-volume measure. The cubic metre (m^3) was chosen for wide spread applicability and ease of conversion. Table 2.1 outlines the conversion factors used.

Table 2.1 Conversion Factors for Dollars per Cubic Metre to Imperial Measures

Product	For Every	Conversion Factor
Sawlogs	$1 per m^3	$5.66 per 1000 fbm
Studwood	$1 per m^3	$5.46 per 1000 fbm
Softwood	$1 per m^3	$1.17 per tonne
8' Studwood	$1 per m^3	$2.32 per cord
Softwood Pulpwood	$1 per m^3	$2.21 per cord
Hardwood Pulpwood	$1 per m^3	$1.96 per cord
Hardwood Fuelwood	$1 per m^3	$1.96 per cord
Palletwood	$1 per m^3	$2.12 per cord
Veneer	$1 per m^3	$2.12 per cord

3.0 OVERVIEW OF CHANGES SINCE THE FLC REED REPORT

3.1 Current Situation

Nova Scotia's solid wood product industry has experienced an unprecedented period of high lumber prices and industrial growth (from 1996 to 2000). A major increase in the productive capacity of the sawmill sector in Atlantic Canada has created an increased demand for softwood sawlogs. Private woodlots in Nova Scotia have supplied much of the wood. At the same time the United States has imposed restrictions on softwood lumber from certain Canadian provinces. Given that Nova Scotia is exempt from those restrictions, and that the exchange rate has favoured the American dollar most of Nova Scotia's lumber is now sold to the United States.

Most of the wood (of both Crown and private origin) previously delivered to pulp and paper mills, is now directed to local sawmills. These mills, in turn, sell wood chips back to the respective pulp and paper mills through exchange agreements. An improved highway infrastructure and higher prices have encouraged the harvest of wood products in areas of Nova Scotia where such activity was previously considered uneconomical. Production capacity and markets for low and medium grades of hardwood are developing. Mechanized cut-to-length harvesting systems have levelled the cost of producing multiple products from the same harvest area. This has made some stands, previously considered uneconomical to operate in, eligible for forestry operations.

The increased productive capacity of many sawmills and the levels of harvesting on private lands are creating the perception that Nova Scotia's forests cannot sustain the current level of harvest. However, Nova Scotia had experienced a long period of low wood prices. It is possible that there was underutilization of the available wood volume during that period making the current harvesting activities appear more extensive by comparison. Furthermore, both Kimberly-Clark and Stora Enso have wood exchange agreements (round wood for wood chips) with many of the sawmills that accounts for a major part of the increased wood supply going to the expanding sawmill sector.

Many Nova Scotia sawmills (current VUA holders) now have foresters on staff or have working relationships with private sector forestry consultants. These mills have gained an increased awareness of wood supply, forest management, environmental issues and operating standards and therefore are better equipped and more able to monitor their operations.

3.2 Issues and Concerns Raised During The Interviews

Wood supply on all tenures

- Currently there is a general perception, among the forest industry professionals in Nova Scotia, that the Province's wood supply analysis is not reliable and that current harvest levels are not sustainable. The sustainability of the wood supply is a concern voiced by many of the VUA holders. They would like to be directly involved in forest management of Crown Lands.
- There is a need for improved forest management planning, which encompasses temporally and spatially explicit wood supply modeling on Crown Lands.
- Private lands have recently experienced unprecedented high prices and harvest levels. These recent highs have been driven by product demand and competition from inside and outside of Nova Scotia. Consequently many mill owners are worried about the sustainability of this wood supply. The establishment of the Wood Buyers Registry and reporting system was an important step in understanding the significance of timber exports to the sustainability of the private land wood supply. The Registry is an annual listing of all Nova Scotia businesses that buy wood. It includes a report of the volume of wood each of the buyers dealt with in the previous year.

Investment in forest improvement

Provincial funding of silvicultural activities on Crown Land has been reduced due to fiscal restraint and, while the utilization of the Crown allocations has increased, the level of silviculture effort has not kept pace. This is a concern to the ten-year Volume Utilization Agreement holders. They are very interested in promoting a higher level of silvicultural activity.

Fairness in the allocation of Crown wood

Currently, there are three classes of sawmills:

1. Twenty-two of the larger sawmills have ten-year Volume Utilization Agreements (VUAs). These mills depend on Crown wood for anywhere from 3% to 10% of their supply. By forging strong alliances with the pulp and paper companies, these sawmills have also secured exchanges of round wood for chips that have allowed them to further increase their productive capacity.

2. There are approximately sixty-five sawmills (several of these are of similar size and capacity to the VUA holders) that do not have a Crown allocation.

3. In addition there are over one hundred sawmills, much smaller in size, that do not have direct access to Crown wood either.

Since 70% of all Crown wood is already assigned to the two long-term license and management agreement holders, there is only approximately 30% of the crown wood supply that may be allocated to VUAs. A limited wood supply means that there is a limit to the additional number of beneficiaries that can benefit from Crown wood allocations.

Capital Investment Incentives and Tenure of Wood Supply

Softwood

It is not necessary to increase the softwood primary capacity in Nova Scotia, as the softwood supply has reached maximum levels of utilization. The main opportunity to improve economic benefit would be in value-added processing of softwood.

Hardwood

Some increase and/or improvement in hardwood processing capacity is required in the low to medium grades of hardwood products. Investment in this sector would contribute to improving the market opportunities for all grades of hardwood.

3.3 Changes Since the FLC Reed Report

This section of the report will review the changes that have occurred in Nova Scotia's forest sector since the FLC Reed Report in 1987; and outline the forest sector's needs at the present time.

At the time of the Reed Report, the Nova Scotia forest sector was facing significant opportunities for expansion. Although the expected industrial expansion has occurred, it has been limited to the softwood sector only. Investment in forest management is still highly variable and Nova Scotia has recently seen a reduction in silvicultural activity on Crown Lands.

Table 3.1 presents the prevalent conditions in the Nova Scotia forest sector at the time of the Reed Report.

Table 3.1 Prevalent conditions/observations in the forest sector in1987 and their current status

Conditions Found in the Reed Report – 1987	Current Conditions
Since 1950, the production of sawlogs has fallen steadily to half of the early post-war volume – while pulpwood production has increased seven fold.	The production of pulpwood (as roundwood) has decreased dramatically as sawmills have modernized to process nearly all of the softwood volume into lumber, selling wood chips to the pulp and paper industry.
The need for more productive Crown forests capable of higher timber yields was a topic of concern in government policy and legislation.	The levels of investment in Crown Land forest management have fluctuated significantly over the past decade. They peaked under the Federal/Provincial Forest Development Agreements, but have seen a major decline since 1995.
Stumpage rates for pulpwood on Crown Lands represent a considerable benefit component, and were used to entice the building of the three major pulp and paper mills in Nova Scotia. Note: During the period covered by the Reed Report (1950 to 1970), Bowater Mersey still had a Crown Land allocation.	The Crown pulpwood stumpage rates, on both the Stora Enso and the Kimberly-Clark licenses, retain a benefit component. A significant portion of the Crown softwood harvest on their Licenses is re-directed to sawmills in exchange for wood chips. The stumpage due the Crown is paid for sawlog products, not pulp products.
The wide range of forest measurement units in use in Nova Scotia is prohibitive to making price comparisons: between regions within the Province and to areas outside of the province.	The scaling and accounting system is still prone to confusion, because multiple and disparate units are still in use. The evolving status of wood supply analysis and IRM management present an opportunity for the Province to initiate a move towards solid metric wood units (solid m^3 or Green Metric Tonnes).

Conditions Found in the Reed Report - 1987	Current Conditions
The need to distinguish between grades and species in establishing stumpage prices was discounted because the higher administrative costs would tend to offset any gains in revenue.	Because sawmills are processing the entire tree, there is even less of a need to distinguish between grade and species in setting stumpage rates. The current wood processing system does promote value- added products in stem sizes not previously processed. Staffing reductions within NSDNR also encourage a streamlining of the product list, in order to simplify administration of the stumpage program.
Private woodlots accounted for approximately 40% of the provincial wood supply. One of the factors contributing to the low representation of private wood was that saw log prices in Nova Scotia were considerably lower than those in New Brunswick and Quebec.	Currently, private woodlots make up between 40% and 50% of Nova Scotia's wood supply. The demand for softwood from Nova Scotia's private woodlots has increased dramatically over the last decade driving prices up and reducing the price gap with neighbouring provinces.

3.4 Forward Look

- The Nova Scotia forest sector needs to exercise some caution as the industry grows. Many sawmills are now heavily capitalized and rely on the pulp and paper mills for a large portion of their round wood supply and for their chip markets. Major fluctuations in lumber prices or chip markets can put these mills in a precarious position.
- Any sharp drop in lumber prices or the profitability of wood products could cause stumpage rates for private land wood to drop. Markets across the province would then become less homogenous as larger mills reduce their demand and wood supply radius. The result could be a decrease in stumpage prices and a corresponding reluctance of private landowners to harvest their timber until markets are more favourable. Any reluctance to sell stumpage, for even a few months, could be cause for concern for some mills that depend heavily on the private wood supply.
- There will be some streamlining of the wood products industry in general: some mills will close for wood supply reasons, others for management or succession reasons.

- Log quality decline before it improves. This is due to past Crown allocation practices, which tended to concentrate harvesting activities in stands containing the higher quality wood.
- Forest management guidelines and constraints have not been fully developed at this time. Still, many forest product businesses in Nova Scotia already consider themselves to be addressing these issues, and do not perceive a need to radically alter their present operational practices.
- Land use and environmental restrictions will tend to limit the availability of Crown wood. In order to support alternative, non-timber uses/values, intensive management of the forest may be required in those designated areas where the primary land use is to supply wood to industry. Some of the larger companies consider Nova Scotia to be behind other jurisdictions in implementing an explicit forest management structure.

4.0 WOOD SUPPLY TENURE/ALLOCATION

Tenure of wood supply from Nova Scotia's Crown Land has been, and continues to be, an incentive for capital investment. This is certainly the case for the two long-term license holders, and probably for many of the Volume Utilization Agreement holders as well.

In general, there is no need for to seek further expansion of the primary softwood processing capacity in Nova Scotia. Future increases in economic benefits with respect to softwood products should be realized from value-added processing.

Hardwood species are still underutilized in Nova Scotia. The lack of processing capacity for lower grades of hardwood prevents optimal utilization of the higher grades of hardwood. In many cases, it is not economically feasible to only harvest the small proportion of high quality products without a viable market for the low-grade products – which form the vast majority of the hardwood volume.

The wood products industry values Crown wood allocations primarily for stability and predictability of supply. The stature/recognition it brings when seeking financing is also a desirable feature.

The Province does maintain long-term control over wood allocation under the current VUAs, however there is some room for improvement. There are some economic benefits, associated with harvesting wood from Crown Land, that are not being realized. For example, not all of the wood is getting to appropriate mills in a manner that produces the intended economic benefit. In some cases, when a mixed wood cut block is assigned to a softwood processing facility, the softwood is delivered, scaled and processed at that facility. The softwood stumpage due is then paid to the Crown. The hardwood is scaled and Crown stumpage is paid on the reported volume. The hardwood is subsequently sold, at market prices, to another mill or as fuel wood. Any intended benefit that may be derived from security of tenure, stability of supply, and stumpage rates of Crown hardwood is lost when the hardwood is sold at market prices. Alternatively, the same situation arises with respect to softwood when a hardwood processing facility is harvesting a mixed wood stand.

4.1 Long-term Agreements

The long-term licenses were introduced to secure important investments in three pulp and paper mills. Two of the licenses are still in effect. They are land-based agreements designed to supply wood to the Kimberly-Clark and Stora Enso pulp and paper mills.

The terms of the long-term license agreements (held by two pulp and paper companies) are set down in their respective Acts passed in Nova Scotia's legislature. The agreements were legislated in 1965 and 1958 respectively. As legislated agreements, they are not within the mandate of this assignment. Some benefits of and disadvantages of these agreements are outlined below:

Benefits of Long-Term Agreements:

1) Management of the forest resource at an economically efficient scale: i.e. more efficient management of a larger land base;
2) Monitoring and administration of the resource allocation becomes easier for the Crown agencies;
3) Long-term tenure means that there will be consistency, in administering IRM principles and criteria;
4) Stable economic benefits to a region.

Disadvantages of the Long-Term Agreements:

1) The control of the forest resource has passed from the Crown's hands to the beneficiary's;
2) The intended security of supply associated with a Crown resource is only available to the two beneficiaries;
3) A portion of the annual allowable cut, or AAC, (primarily in the form of under-utilized species) is not being harvested. The AAC is a calculated wood volume available for harvest annually and is based on the forest's growth/ production and its losses due to mortality.

4.2 Ten-Year Volume Utilization Agreements

There are twenty-two sawmills that have a ten-year Volume Utilization Agreement (VUA). The percentage of their wood supply coming from Crown Lands ranges from 3% (for larger mills) to 10% (for smaller mills). These mills are part of the rapidly expanding softwood sector. The security of supply and status associated with being a VUA holder are factors that are recognized by financial institutions when a mill is seeking financing. To date, there have been two ten-year VUA periods, and, in that time, some of the beneficiaries have changed. Many variations in the terms and conditions as well as in the implementation of the agreements have also occurred. These businesses consider the need for improved forest management of Crown Lands to be of utmost importance if the current levels of harvest are to be maintained. Some benefits and disadvantages of these agreements are outlined below:

Benefits of the VUAs:

1) The VUA holders are provided with security of supply over a moderate length of time;
2) The cost to industry of administering the resource allocation is minimal;
3) Province has the ability to control the flow of wood from the Crown Land;
4) Having many beneficiaries with interest in a variety of products provides a means for more efficient and diversified use of the timber resource.

Disadvantages of the VUA Agreements:

1) Not all beneficiaries have the capability to participate in comprehensive forest management;
2) The short duration of the agreement can have a negative impact on the application of IRM principles.
3) A multitude of users requires a higher level of effort by Provincial agencies to monitor and administer activities on Crown Lands.
4) Many sawmills currently have no Crown allocation. They would appreciate the stability of supply (even if the volumes are low) and recognition/stature that comes with having a VUA.

4.3 Tendered Wood Sales

Tender sales in Nova Scotia from Crown Lands represent a very small (2,000 to 5,000 m^3 /year) portion of the annual Crown Land harvest, which are localized within the Western Region of the Province. These sales are restricted to either un-licensed lands or for products not used by VUA holders. They are primarily utilized for forest management purposes such as stand improvements, salvage or opportunities to return the sites to higher value production. Tender sales have a two year period within which the harvesting must take place. This timeframe is extendable if extenuating circumstances exist.

Benefits of a Tendering System:

1) It provides a mechanism for opportunistic harvesting of products for which demand is erratic;
2) It provides an equal opportunity for all mills to gain access to Crown timber.

Disadvantages of the Tendering System:

1) It does not provide a secure wood supply to any beneficiary;
2) It can require significant NSDNR administration and monitoring for a small amount of product because NSDNR incurs all direct costs associated

with identification, layout and tendering of harvest blocks. Consequently, there is no economy of scale;

3) Tender sales are limited to regions of the Province where Crown Lands are not already committed to a beneficiary under one of the other forms of agreement;

4) It is difficult to maintain control over the destination of the product and to ensure that Nova Scotia wood products go to Nova Scotia mills.

4.4 Obligations and Costs

The two long-term license holders have forest management costs that are currently above the industry standard. This situation has arisen from the following reasons:

- Current harvest levels are low in the relation to the large land base under license hence the holder's costs/m^3 are considerably higher than the industry standard. The situation is expected to improve over the next ten years as harvest levels increase.
- In comparison to other jurisdictions, Nova Scotia's forest management plans are still in the preparatory stages, with significant front-end developmental costs.

In assessing this situation, AGFOR has adopted the overhead charges currently used by New Brunswick Crown Licensees to assign a fair share of the Licensee's forest management costs to the Sub-Licensees (the rate charged is $\$4.67/m^3$). These overhead charges cover essentially the same management costs incurred by the Nova Scotia Licensees. However, they do not account for the developmental costs or the lower harvest levels being experienced by the forest industry in Nova Scotia.

In the administration of the Volume Utilization Agreements, industry's cost burden ranges from full participation in forest management to very little effort being expended. In the latter case, NSDNR assumes all the responsibility for forest management planning. Because all of the overhead costs of forest management are being borne by NSDNR, the majority of Volume Utilization Agreement holders do not see any cost associated with their tenure of supply. Based on interviews with VUA holders, AGFOR estimates the cost to industry for forest management obligations at $\$2.13/ m^3$. This figure provides a reasonable benchmark of costs for this group recognizing NSDNR's role, the fact that some of the companies incur management costs while others do not, and that volumes of wood are often small.

4.5 Intended Results of Tenure and Allocation Agreements

Wood Supply Management

Many of the Volume Utilization Agreement holders feel their share of the Crown resource should be more intensely managed. They consider themselves competent and motivated enough to do so in exchange for security of supply and fairness of allocation. However, depending on the specific format used to involve the Volume Utilization Agreement holders in Crown Land management, only a few would have the resources and experience to effectively and efficiently manage a Crown Land base for both timber and non-timber resources. The standards for Crown Land Management (to evolve from both the IRM and Forest Practices Code processes) have not yet been fully developed. Without knowing the Crown's objectives and exactly what issues and criteria they will be expected to deal with, industry cannot adequately assess their significance in relation to the beneficiary's share of the wood supply or their commitment to participate in forest management.

Both DNR and Industry Agree that:

- Forest management needs to become a formal process explicitly stating objectives, realistic costs, results and benefits.
- Silviculture programs on Crown Lands will need to be intensive, if the Province's objectives of a sustainable, or even enhanced, wood supply are to be achieved while respecting a host of non-timber uses and related management issues.
- Some improvements need to be made with respect to the fairness of fibre allocation and the distribution of costs and responsibilities among the users of the resource. This point of view is held by both the Volume Utilization Agreement holders and by members of the forest sector who currently have no utilization agreement.

Factors Contributing to The Current Situation

- Approximately 30% of the productive Crown forest, spread out over the Western and Central regions of the province, is unlicensed. It is this unlicensed land base that supplies the twenty-two VUA holders (whose allocations range in size from 1,130m^3 to 90,259m^3). Under such fragmented conditions it is difficult for either the Crown, or the beneficiaries, to achieve an economy of scale when addressing forest management. This is especially true if all twenty-two VUAs are attempting to do so individually.
- NSDNR is obligated to respect the concerns of multiple users (with both timber- and non-timber-oriented goals) on a limited Crown Land base. These concerns will be addressed though the proposed IRM strategies being adopted

by the Province. The implications of this are not yet fully known; it will be several years before measures to address the full range of issues are finalized and their impacts adequately understood.

- NSDNR is accountable to the people of Nova Scotia with respect to deriving economic benefit through industrial forestry activities and the sale of Crown wood.

Scaling and Reporting

- Standardized administrative and reporting procedures, such as solid metric units of measurement (volume – m^3 or weight – GMT), are required. This is in order to reduce the costs and risks associated with misrepresented wood volumes. Such problems are common when multiple units of measure are employed. There is ample additional experience to support this position in New Brunswick, and in Quebec, where the transition to solid units of volume measure has already occurred.

4.6 Other Jurisdictions

A review of policy and practices in neighbouring jurisdictions, from Nova Scotia's perspective, yields alternatives that are worthy of consideration. Both New Brunswick and Quebec have forest management practices that are relevant to the current situation in Nova Scotia. Both provinces have forest policies that deal with a range of beneficiaries who participate actively and financially in the management of the resource. The principal difference between these two provinces and Nova Scotia is that Crown wood does not play as significant a role in Nova Scotia's industrial wood supply as it does in New Brunswick or Quebec.

In both New Brunswick and Quebec there are recognized, established forest management costs and responsibilities associated with their tenure of supply arrangements. Most of these management costs are over-and-above the cost that would be incurred in a stumpage sale on private lands (See Appendix B - Comparative Analysis). When these management costs are added to the Crown stumpage rates (associated with each respective wood product) a more accurate representation of the total cost of Crown wood harvesting is produced. This total cost can then be used to determine if parity exists with private lands.

The New Brunswick forest management format was the most commented on by those industry representatives interviewed by AGFOR. In New Brunswick, the provincial Crown Lands are divided into ten Crown Timber Licenses, which are managed by eight Licensees. Each Crown Licensee also supplies wood to a number of Sub-licensees who share in the Crown wood allocation. Such a system assigns the management of Crown Forests to the forest industry. It includes several beneficiaries who participate financially in the management of the

resource in exchange for a supply of wood suited (in terms of tree species and wood quality) to their respective mills. The Licensee's tenure is for twenty-five years – and is reviewed every five years. A Crown Sub-license lasts for a period of five years and is reviewed after each five-year period. The Licensee has considerable influence on how the license is managed and how the Sub-licensees obtain their wood.

Some of the relevant features of this type of system include:

- Having more mills eligible to benefit from Crown wood supplies presents a forest management challenge;
- There is more pressure on the currently available wood volume, resulting in an increased need for intensive silviculture programs;
- Each beneficiary obtains only the species/product that is required to produce specific products. Any other wood (other species/product mixes) is directed, along with associated benefits, to appropriate mills at input costs (includes roads, harvesting, sorting, and hauling) plus management /overhead costs. Each mill gets the primary wood product(s) it requires, and the Province benefits from improved utilization and added benefit of economic growth;
- Improved fairness in the allocation of the forest resource (i.e. a more even distribution of average hauling distances and operational costs).

Quebec's forest management system is similar to New Brunswick's, with the exception that all Crown beneficiaries are "Licensees" or *Contrat d'approvisionnement et d'aménagement forestier* (CAAF) holders. There are no Sub-licensees. Management decisions are made on the basis of one mill one vote (regardless of size). They choose one organization (which can be one of the CAAF holders or a third party) to take the lead in preparing the management plan and overseeing the administration. As in New Brunswick, all management costs are shared on a volume basis. Each beneficiary is responsible for restocking harvest sites, as well as any additional silvicultural activities required, to ensure that the species group(s) they depend on are adequately replenished.

In both New Brunswick and Quebec several beneficiaries may be involved fulfilling an allocation on the same land base with different species/ products being directed to appropriate mills. When Crown wood is transferred from beneficiary to beneficiary the receiver may only be charged the costs (stumpage price, overhead, road costs and harvesting costs) incurred while harvesting the wood.

4.7 Alternative Tenure Options Raised by Industry Representatives

During the course of the interviews forest industry representatives proposed the following alternative methods of allocating Crown resources:

Multi-Year Tenders

Whereby a multi-year allocation of Crown Land timber is auctioned or tendered to the highest bidder. In this way, security of supply would be improved over the current tendering system (maximum 2 year term). This method is unlikely to be desirable for the following reasons:

- It would result in the Province inheriting the management responsibilities and long-term costs;
- It could be expensive for the Province administer and monitor;
- Un-licensed Crown Land is unavailable across many regions of the Province;
- larger mills could out bid smaller one in order to protect their interests;
- The lack of security of supply could discourage capital investment in the industry.

Forest Stewardship Agreements

Whereby individual parcels of Crown Land would be assigned to specific mills. The Province could specify the management expectations and the mill would undertake the activities. The resulting sustained yield would be directed to the managing mill. The drawbacks to such a method are as follows:

- This method would be appropriate only for those mills that have the forest management expertise and resources to plan and conduct the work;
- Costs to administer such a fragmented system would likely be excessive for the Crown and for smaller allocations. Decisions with respect to which organisations are eligible for consideration would be complicated;
- Long-term sustainability on smaller parcels may be difficult to achieve because of the structure of the forest.

New Brunswick/Quebec Format Licensee/Sub-licensee/CAAF Holder

A defined set of Crown Land parcels would be assigned to a managing mill or organization on behalf of several users. The Province would specify the management expectations and the mill(s) would undertake the planning and activities, either collectively or through an agreed-upon third party. The Province would direct the resulting timber supply to the mills in the area. The costs of managing the resource would be attributable to a larger land base and shared between several mills, based on their share of the annual harvest.

5.0 BASELINE STUMPAGE

This section addresses the baseline or Fair Market Value of stumpage on private lands. The current Crown stumpage rates are reviewed, along with the costs associated with Crown timber management, and the necessary adjustments to establish cost parity with the Fair Market Value on private land. Species and product mixes are also examined, to better reflect current operating patterns. The application of indices, is reviewed and possible adjustments are examined.

The following issues provide the guidelines to formulate a practical method for determining FMV:

- ***Pricing policies, new baseline and indexing methods***: In developing its methodology for calculating stumpage, the Crown must seek consistency, fairness, and transparency of process. Crown stumpage values must recognize the costs associated with Crown tenure of supply arrangements and seek parity with private land wood.

- ***Grade pricing***: Industry is moving towards total utilization of the tree. The incremental benefit of establishing a new product grade (or maintaining old product grades) for low volume products, when compared to the costs of administering them, is questionable. The move to a simpler structure would encourage full-tree utilization and value-added processing. These measures are also good for private landowners who would be able to market, and be paid for, the entire tree. Because sawmills have started scaling by weight, and are processing the entire tree, there appears to be less of a need to distinguish between grade and species. Approximately 90% of the Crown softwood volume is weight scaled, but the other 10% is measured using a variety of solid and apparent units and measures which are difficult to administer and monitor.

- ***Silviculturally treated stands***: Lower stand-level operating costs may be expected because of higher volumes per hectare, increased wood quality and uniformity of piece size. Currently, the forest sector does not specifically recognize, or have an exclusive rate for such stands. However, they would tend to pay more for woodlots having above average operating conditions - on a case-by-case, competitive basis. On Crown Lands, such stands could be used to offset the additional costs of harvesting other stands where wood quality and operating conditions are poor.

5.1 Baseline or Fair Market Value (FMV)

Crown stumpage (in addition to related overhead and forest management costs), should have cost parity with the FMV of wood on private lands.

The first step, in determining cost parity, is to establish a Fair Market Value of standing wood on private lands in Nova Scotia. In order to accomplish this, data from thirty-seven interviews with harvesting contractors, landowners and landowner organizations (that oversee stumpage sales in each of the five market regions) were conducted. This data was used to determine provincial average market values for each species/product (see Section 2.2).

Table 5.1 presents the Nova Scotia FMV values for 1999-2000 and identifies the methodology used (Weighted, Numerical, Residual) along with the 1999 Crown stumpage rates for Nova Scotia.

Table 5.1 Comparison of Nova Scotia Fair Market Values by product and corresponding Crown Land stumpage rates for 1999 (with no adjustment for parity)

All values are in $/m^3 solid		1999-2000 FMV	1999-2000 NS Crown Stumpage[1] and Management Cost		
Product	Averaging Method	Private Lands	Kimberly-Clark	Stora Enso	10 year Agreement
Softwood (SPF) Pulp	Weighted	$9.93	$4.07	$5.56	$4.93
Softwood (SPF) Studwood	Weighted	$14.54	$10.32	$10.32	$10.32
Softwood (SPF) Sawlog	Weighted	$24.54	$13.50	$13.50	$13.50
Hardwood Fuelwood	Numerical	$5.64	$3.82	$4.62	$4.62
Hardwood Pulp	Numerical	$5.64	$3.82	$3.32	$4.62
Hardwood Palletwood	Numerical	$6.37	$5.71	$5.71	$5.71
Hardwood Sawlogs	Numerical	$18.36	$17.38	$17.38	$17.38
Veneer Prime	Residual	$72.20	-	-	-
Veneer Select	Residual	$24.90	-	-	-

1. NS Announced Stumpage Price Adjustments (99/00)

The stumpage rates for each species/product group, within each market region of Nova Scotia, were remarkably consistent. This may be due to the following factors:

- The export lumber market has been profitable for private woodlot owners: they are experiencing record prices and harvest levels driven by strong demand (competition) both inside and outside of Nova Scotia.
- Improved highway infrastructure, larger truck payloads and the higher prices have encouraged wood production in areas formerly considered uneconomical for operations.
- A capacity to handle the low and medium grades of hardwood is developing. Utilization of higher quality saw logs is concurrently improved by the new capability to deal with the associated low-grade material.

- Cut-to-length mechanization has standardized the cost of producing multiple products and made it economically feasible to harvest many stands that were previously considered inoperable.
- The modernization of mills, to process the entire tree, has generated a market for the entire tree/stand creating economies of scale and allowing lower grades and piece sizes to be transported and processed along with the more conventional and higher priced grades.

A limited availability of price quotes and low prices across all regions indicates that production of the lower grades of hardwood (including pallet wood), which occur in low volumes, appears to be secondary to (and is likely subsidized by) the softwood harvest. This may occur because the producer often underestimates the full harvesting costs, or chooses to offer the landowner a "respectable" stumpage rate, at a loss, and hopefully a low volume, to close the deal with a landowner.

5.2 Costs

There are obligatory costs associated with forest management and harvesting operations on both Crown Lands and private lands. These are costs directly related to timber production that do not include stumpage. Parity with the FMV of private lands can only be achieved by taking into consideration the incremental costs of forest management on Crown Lands when setting the Crown stumpage rate. Table 5.2 identifies the cost components associated with Crown Land wood that are above and beyond those incurred in the purchase of stumpage from private lands. In many situations, in the case of the VUAs and Tender Sales, these costs are actually borne by the Province.

Table 5.2 Costs Associated with Crown Wood Supply Tenure

Cost/Obligation	Long-Term Licenses	10 Year VUA Agreement Holders	Tender Sales
40 - 45 Year Forest Management Plan	Yes	No	No
Annual Operating Plans	Yes	Variable	No
Road Planning, Construction and Maintenance	Yes	Variable	No
Layout of Wildlife Guidelines for NSDNR inspection	Yes	Variable	No
Start-up Notices	Yes	Variable	No
Completion Reporting	Yes	Yes	No
Compliance with Terms and Conditions to meet Crown Objectives.	Yes	Yes	Yes
Planning & Implementing Reforestation Activities	Yes	Variable	No

The overhead costs born by the long-term Licensees are as follows:

- The two long-term license holders, as discussed earlier, have overhead costs that are above average, when compared to industry standards. To address this situation, we have used the New Brunswick overhead charges (currently 4.67$/m^3) to assign forest management costs. From experience, this value provides a realistic cost estimate under typical operating conditions.

- The Volume Utilization Agreement holders have varying overhead costs, which reflect the different levels of participation in forest management. Many did not recognize any costs associated with forest management. Those who did recognize an overhead cost averaged $2.13/m^3 in forest management and overhead costs. The value is higher than expected, especially in comparison to other jurisdictions. The higher costs per unit volume may be explained by the lower volumes of round wood associated with this form of tenure in Nova Scotia. This expense could make Crown wood unappealing for smaller operators.

Similar to Crown Lands, private land wood is now subject to certain overhead costs. As of the year 2000, a registered buyer of private land wood has to consider the costs associated with the new Forest Sustainability Regulations. These costs consist of a recognized value of 3 /m^3 for softwood and $0.60/m^3 for hardwood which are put directly toward promoting silviculture on private land.

Table 5.3 (below) presents the FMV and the costs of Sustainable Forestry Regulations for forest products as well as the obligation costs of Crown Land wood and Crown stumpage rates. The table suggests that when all costs are considered, for both private and Crown timber, the Crown beneficiaries are paying less for softwood and more for hardwood products.

Table 5.3 Total Cost of Forest Management on Nova Scotia Crown Lands in Comparison to Total Costs on Private Lands (includes FMV and Sustainable Forestry Contributions)

All values are in $/m^3 solid	FMV + Sustainable Forestry Regulations	1999/00 NS Crown Stumpage and Management Cost		
	Private Lands	Kimberly-Clark	Stora Enso	10 year Agreement
Sustainable Forestry Reg.s SWD	$3.00			
Sustainable Forestry Reg.s HWD	$0.60			
Management Costs		$4.67	$4.67	$2.13
Product				
Softwood (SPF) Pulp	$12.93	$8.74	$10.23	$7.06
Softwood (SPF) Studwood	$17.54	$14.99	$14.99	$12.45
Softwood (SPF) Sawlog	$27.54	$18.17	$18.17	$15.63
Hardwood Fuelwood	$6.24	$8.49	$9.29	$6.75
Hardwood Pulp	$6.24	$8.49	$7.99	$6.75
Hardwood Palletwood	$6.97	$10.38	$10.38	$7.84
Hardwood Sawlogs	$18.96	$22.05	$22.05	$19.51
Veneer Prime	$72.80	-	-	-
Veneer Select	$25.50	-	-	-

In order for the Crown softwood stumpage values to achieve parity with FMV (including the Sustainable Forestry Regulation charges) on private lands, they must increase. This increase can either occur through the Crown stumpage rates, or as an equivalent contribution to silvicultural activities (similar to the private lands contributions under the Forest Sustainability Regulations). The advantages of using the latter option are as follows:

1. It addresses concerns voiced by the VUA holders with respect to the sustainability of supply, and assures NSDNR of an active silviculture program on Crown Land;
2. It creates an opportunity for the VUA holders to have active involvement in the management of Crown Lands;
3. It would not be affected by changes brought about by indexing adjustments to stumpage;
4. It would not compromise the Canada-US softwood agreement, because silviculture is a recognized cost on private lands under the Sustainable Forest Regulations.

5.3 Species/Product Mixes

There have been some major changes in Nova Scotia's forest sector since the Reed Report in 1987. The simplification of the industry brought on by the modernization of the sawmill sector and the advent of cut-to-length mechanical harvesting has reduced the differentiation between primary round wood products. This is very similar to what has been happening to provincial stumpage values in New Brunswick where studwood and sawlogs are treated identically, and in Quebec where there is only one price for softwood.

Softwood

A move to a simpler species/product structure would encourage full-tree utilization and value-added processing. These practices are currently in place with many modern mills. This technological development is good for private landowners who are now able to market the entire tree.

Hardwood

In order for the Crown stumpage rates for hardwood to achieve parity with stumpage values on private lands, the rates need to be reduced. The incentive to operate and process the lower grades of hardwood will encourage higher quality saw logs to be utilized for higher value products.

5.4 Indexing

The use of forest product indices provides a means of allowing Crown stumpage rates to fluctuate along with the selling price for the various forest products in their respective market places. Ideally trends for Crown stumpage rates would mirror those for the market prices.

Currently Nova Scotia is concerned only with the changes from one year to the next, as compared to the stumpage rate of the reference year. The reference (or base) year may be 10 years or more removed from the indexing year. Adjustments are made annually, whereby the average price indices for an entire year are used to generate the adjustments current year. The result is that the annual adjustments to stumpage rates always lag one year behind the market conditions that generated them. Therefore, the stumpage rate is not representative of the market conditions at the time of application, but of the conditions of the previous year.

An alternative is to effect the adjustments on a much shorter time scale in order to more accurately represent the market conditions under which wood products are being sold. As an example, the stumpage rates may be adjusted on a quarterly basis. Figure 5.1 shows the annual market changes for softwood logs, and the lag in reaction time associated with adjusting the stumpage rates annually as opposed to using quarterly adjustments. Using the shorter time period to adjust the

stumpage rates would be more representative at the time of the adjustment. However, this will generate more variability in the stumpage rate – meaning more changes in the short term. Such variability would make it difficult for NSDNR to predict annual revenues. Quarterly changes to the stumpage rates will also make it difficult for Licensees to estimate their annual stumpage expenses when calculating annual operating budgets.

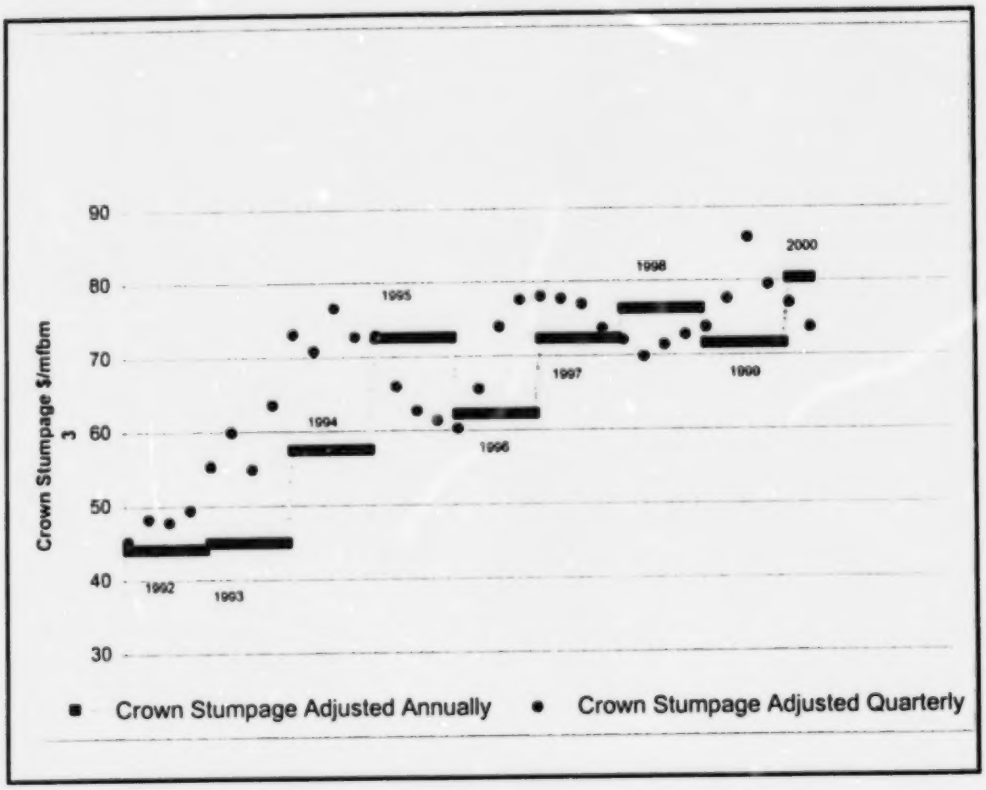


Figure 5.1 Comparison Between Adjustments to Stumpage Values Made on a Annual Basis and Adjustments on a Quarterly Basis

Such a system compares changes in the previous quarter's prices to the prices of the reference year (i.e. the last calendar or fiscal year). For example, the adjustment for the third quarter (July, August, September) of 2000 would consider the change, in price, during March, April and May (there is a lag of one month in the publishing some of the indices) of 2000 over the entire 1999 calendar year. Under such a schedule, there is a lag of only four months between the price change and the stumpage adjustment. For this to happen in a timely and consistent fashion, the wood deliveries need to be accurately tracked, and reported, quarterly. Alternately, the Province could have the adjusted rates applied to a predetermined percentage of the annual harvest reflecting the typical level of

harvesting or delivery activity in that quarter. The latter would be the easiest method for NSDNR to administer.

Once an index or mixed price (generated by combining several product indices) series is selected it is prudent to make sure it is reflected in Canadian Dollars. As depicted in Figure 5.2 historical data suggests that there may well be an inverse relationship between product prices and the exchange rate between the Canadian and American dollars, especially when the Canadian dollars was trading at over $0.85 US in the early 90's.

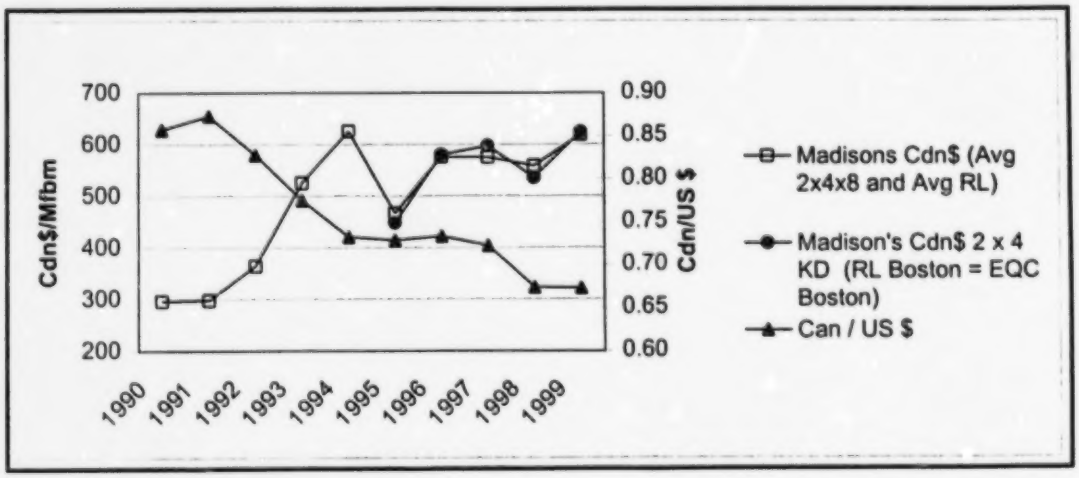
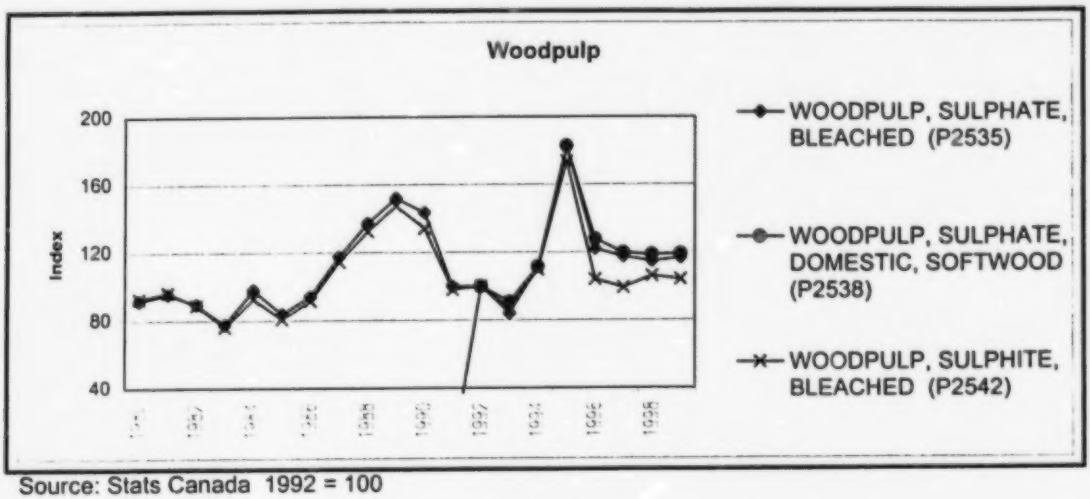


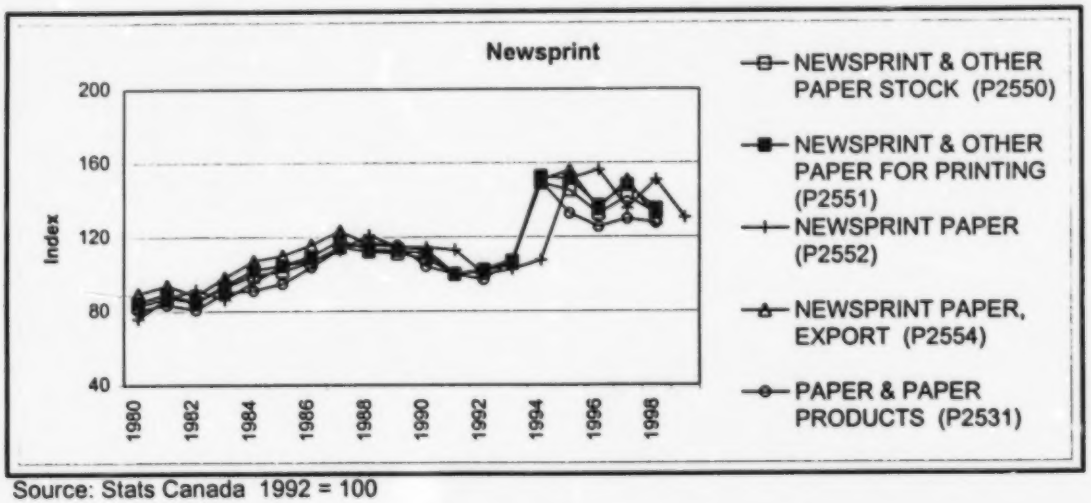
Figure 5.2 Graph showing inverse relationship between Canada and USA Currency Exchange Rate and the price of Lumber (in $ Cdn)

The following figures present the indices for Woodpulp (Figure 5.3) and for Newsprint (Figure 5.4) over a twenty year period. In each figure, the respective commodity indices follow each other closely making the choice of index a function of the product and the market place. Because the previous year is used as the reference year, it would be possible to change indices should Nova Scotia's forest sector adopt new market. Keeping a record of the standard indices is useful in examining historical trends.



Source: Stats Canada 1992 = 100

Figure 5.3 Graph showing historical Woodpulp price indices



Source: Stats Canada 1992 = 100

Figure 5.4 Graph showing historical Newsprint price indices

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 General Conditions

Cost parity between Crown stumpage rates and the fair market value of standing timber on private land is of primary concern to the province of Nova Scotia. This parity is achieved (for a given species/product) by considering the total cost of operating on Crown Lands, including the stumpage fees and the costs associated with forest management obligations on Crown tenures. These costs are over and above those associated with the purchase of stumpage on private lands.

A silviculture "levy" comparable to the contributions that occur on private lands, may be a step towards ensuring a consistent level of silviculture on Crown Lands. The proposed changes to the current system do not affect the relative importance, in terms of volume and cost, of wood from private land.

At the time of this review, consideration of the pending Wood Sustainability Regulations were a notable component of the forest sector's involvement in promoting better forest management on private woodlots. This was particularly noticeable in sawmills that have recently hired forestry professionals to lead their part of this initiative.

6.2 Tenure of Wood Supply

<u>The long-term license holders</u>

The long-term licenses rely primarily on the softwood resource. Both mills have agreements with various sawmills, which produce wood chips for them in exchange for round wood from their long-term Crown licenses.

Two problems arise on the long-term licenses. The first is a failure to make full utilization of the hardwood portion of the annual allowable cut (AAC). The AAC is a yearly, calculated wood volume based on forest growth/production and its losses due to mortality. The second is the loss of the benefit of providing security of supply to a specific mill when Crown wood is sold on the open market.

Recommendation - That DNR explore the possibility of redirecting unused wood volume from licensed Crown Lands to another Crown beneficiary for a period of 1 to 5 years depending on the potential for use by either beneficiary. Cost recovery, from wood redirected to another beneficiary, by the long-term Licensees could only include: input costs such as harvesting and roads plus reasonable overhead /management costs.

Benefits:

- The long-term Licensee would recover forest management and infrastructure costs on a volume basis;
- The long-term Licensee would retain the right to access wood from the currently unused species group at a later date when their processes require it;
- The Crown would get stumpage at the prescribed product/species rate;
- The region gets the economic growth associated with the temporary re-allocation.
- The second beneficiary would have a wood supply for a limited time;
- Redirected wood would contribute to the Crown's wood volume commitments to the other mill.

This proposed reallocation is temporary, and should not be used to justify a long term investment.

Volume Utilization Agreements

VUA holders and DNR staff both recognize a need for improved management on the currently unlicensed Crown Lands to meet the longer-term sustainable forestry objectives outlined by the Province. The VUA holders are ready and willing to become actively involved in forest management, in exchange for security and fairness of wood supply. Nova Scotia could move towards a forest management system similar to New Brunswick's and/or Quebec's. This alternative is likely the most cost effective and efficient for the Province of Nova Scotia. NSDNR will have to develop clear, fair criteria for determining eligibility for a Crown allocation, and for evaluating the performance of a beneficiary.

Recommendation - That productive Crown Land with a forest fiber vocation, not currently under a long-term license, be combined into one, two or three land bases. Each land base would be capable of providing a sustainable supply of wood to several VUAs.

Recommendation – That the VUA holders share the responsibility and costs of forest management planning and silviculture activities, in exchange for a secure Crown wood supply.

Recommendation - That obligations and forest management costs associated with VUAs be proportional to their Crown wood volume allocation.

Recommendation – That DNR formulate uniform eligibility requirements, terms of reference and objectives associated with VUAs. There should be a set of explicit eligibility criteria for qualifying for a VUA. These criteria should consider the following:

- The applicant's historical draw from Crown Land;
- The applicant's economic contribution to the Nova Scotia economy;
- The applicant's presence in the private wood marketplace;

- The applicant's business development profile (industrial operating plan).

The above criteria would be considered guidelines. Eligibility would ultimately be subject to NSDNR's discretion.

Benefits:

- By adopting criteria that reflect a commitment to actively manage the resource there is an assurance that a suitable silviculture investment on Crown Lands will occur over time;
- Having several VUAs on one land base will encourage better sorting of the various products at roadside (different round wood products would be sent to different mills from one operating site);
- A more equitable distribution of harvest blocks (size, species, distance) is possible;
- DNR will only have to monitor a few separate land bases, resulting in an economy of scale;
- The VUAs, as a group, also benefit by an economy of scale;
- The Province would be able to review each beneficiary's business development profile. Doing so would enable the Province to better understand the beneficiary's wood supply requirements, other possible wood sources, and the beneficiary's plans for primary processing and value-added products;
- The level of involvement of the VUAs can be phased-in over time with the Crown maintaining selected responsibilities.

Tender Sales

Tender sales are a method used by the Province to periodically allocate Crown wood for specific purposes (e.g. to promote utilization of underutilized species). Tenders are expensive for the Province to administer and, as a principal means of allocating wood they do not offer long-term security of supply. This may prove to be an impediment to larger capital investments in the industrial sector.

Tender sales may continue to be useful in specific circumstances. Such circumstances might include unlicensed Crown Lands where there is a need to meet sustainable forest management criteria, or forest stands in which none of the VUA holders have an immediate interest.

6.3 Stumpage

Changes to pricing policies, new baseline and indexing methods, and management costs and obligations

Parity can be achieved by an adjustment to the Crown stumpage rates and/or by a contribution to silviculture on Crown Land. The latter has several advantages that address many of the concerns of the Volume Utilization Agreement holders and DNR.

Recommendation - That the Crown establish a silviculture fund, equivalent to the contributions (made under the Sustainable Forest Regulations) on behalf of private landowners, for use by the beneficiaries to implement silviculture for their respective species/products groups on a Crown Land base shared with other beneficiaries.

Recommendation - That Crown stumpage values plus the costs of obligations associated with the Crown wood supply tenure agreements plus contributions to a Crown silviculture fund be the basis for achieving cost parity with wood from Nova Scotia's private woodlot sector.

Benefits:

- This is useful to ensure equivalent costing in comparing one jurisdiction to another, and to better reflect the actual costs associated with Crown wood supply tenure;
- It maintains cost parity between wood from Crown Land and wood from private land;
- It ensures a consistent level of silviculture activity on Crown Land over time.

Recommendation - That the costs of obligations associated with tenured Crown wood supply agreement be monitored over a three year implementation period.

Benefits:

- The monitoring will ensure that an economy of scale is maintained;
- It allows the evolution of better management practices which will have an effect on costs;
- Regular monitoring will detect and allow the correction of any inefficiencies;
- It allows unanticipated costs to be considered.

Table 6.1 outlines the recommended new stumpage rates for Crown Lands in Nova Scotia. It should be noted that the rates expressed in the table are the proposed *BASELINE* Crown stumpage rates - the values required to maintain cost parity with fair market value on private lands. In calculating these rates AGFOR Inc. has accounted for the obligatory silviculture contributions currently in place on private lands in Nova Scotia, the estimated overhead costs associated with Crown tenure and the proposed silviculture levy for Crown Lands (See Table 5.3).

Table 6.1 Nova Scotia Crown Land Stumpage Rates for 1999 and the Fair Market Values on Private Lands

All Values in m^3 solid	FMV+SFR[1]	New (Nov. 1999) Baseline[2]	
Product		Long-term Licenses	VUAs
Softwood (SPF) Pulp	$12.93	$5.26	$7.80
Softwood (SPF) Studwood	$17.54	$9.87	$12.41
Softwood (SPF) Sawlog	$27.54	$19.87	$22.41
Hardwood Fuelwood	$6.24	$0.97	$3.51
Hardwood Pulp	$6.24	$0.97	$3.51
Hardwood Palletwood	$6.97	$1.70	$4.24
Hardwood Sawlogs	$18.96	$13.69	$16.23
Veneer Prime	$72.80	$67.53	$70.07
Veneer Select	$25.50	$20.23	$22.77

1. Fair Market Value + SFR (Sustainable Forestry Regulations: Softwood $3.00/$m^3$ and Hardwood $0.60/$m^3$).
2. Baseline Crown Stumpage Rates Nov 1999. (FMV+ SFR) - (Crown Overhead + Licensee Silviculture contribution).
   - Licensee silviculture contribution is proposed to be equivalent to the Sustainable Forestry Regulation values.
   - Crown Overhead is assumed to be $4.67/$m^3$ for Kimberly-Clark and Stora Enso, VUAs $2.13/$m^3$

Note: Any products not shown would be adjusted, at NSDNR's discretion, to reflect equity.

6.4 Grouping of Species and Products

Value Added Products and Underutilized Species

Softwood

The industry is moving towards harvesting all of the wood from the forest stand and moving towards processing the entire tree.

Currently there is very little pulpwood delivered to either of the pulp and paper mills. Virtually all of the softwood is delivered to the sawmills, therefore only two softwood products are being produced at the stump: studwood (which now encompasses the pulp grades as well) and sawlogs. Other product volumes are so small that any further breakdown by grade makes the costs of recording and reporting them separately uneconomical.

Recommendation – That the Province maintain its current softwood species product list.

Recommendation – That the Province continue to monitor softwood FMV prices for a range of products every five years to detect any market acceptance or recognition of specialty grades or underutilized species.

Benefits:

- This constitutes a cost effective manner for NSDNR to maintain a product price list flexible enough to meet the Province's needs.

Hardwood

The development of hardwood markets has been impeded in Nova Scotia by the shortage of processing capacity for the lower grades of hardwood. Having a capacity to utilize field-run hardwood grades would encourage increased production of hardwood sawlogs and perhaps increase the access to softwood in mixed wood stands.

Recommendation - That the Province investigate options to promote industrial capacity to process the lower grades of hardwood. Such options may include temporarily freezing the stumpage rates for low-grade hardwood at present levels, or perhaps even lowering the rates to encourage the establishment of a new processing facility.

Benefits:

- The establishment of a low-grade hardwood processing facility would ultimately improve market access for the private woodlot owners;
- There will be an improvement in the overall efficiency in the utilization of the timber resource on both private and Crown Lands.

6.5 Indexing

The Fair Market Value (FMV) is a reflection of the Nova Scotia market for private wood during a specific period in time. It involves private landowners selling stumpage to contractors and mills. FMV is what the Province is seeking to have cost parity with when Crown stumpage rates are set. The indices used to adjust stumpage rates are taken from forest product commodity markets where Nova Scotia's wood products are being sold. The two markets are geographically separate, and deal with different commodities. There is no guarantee that the indices accurately reflect the entirety of the Nova Scotia marketplace over long periods of time.

Recommendation - That the DNR conduct an independent review of private land stumpage values every five years - to re-establish a new baseline or Fair Market Value (FMV) for standing timber on private lands in Nova Scotia.

Benefit:

- The baseline FMV is assessed on a regular basis, ensuring it remains current;
- There is an opportunity to validate and/ or adjust the Crown's species/product list for market acceptance.

Indexing allows Crown stumpage rates to fluctuate according to prices received by Nova Scotia forest industry in their respective market places. The objective of indexing is to allow Crown stumpage rates to vary with market trends, providing some relief when markets are down and recovering when markets are up.

Generally, indexing, considers changes in the market from one year to the next. Hence, the reference year should be the previous calendar year or fiscal year.

Recommendation – That the previous year be adopted as the reference year for Crown stumpage indices.

Benefit:

- The annual forest products indices and the commodity prices will reflect inflation in their respective market places from one year to the next;
- It is possible to change to a more relevant wood products index or commodity price when shipments of Nova Scotia forest products to a given market change or a new market emerges.

The current system uses pulp and paper indices (weighted by product volume), and Statistics Canada's Atlantic Canada Lumber Index that reflects the local market place in Atlantic Canada. Since the advent of the Canada/US Exclusion Agreement for Maritime Softwood (1996), Nova Scotia producers have benefited from a relatively open access to US markets not reflected in the local Statistics Canada Atlantic Canada Lumber Index.

Recommendation – That relevant indices or commodity prices be reviewed where changes in markets involve more than 10% of the volume shipped for more than 12 consecutive months (one full year).

Benefit:

- This allows the Crown to seek the most representative index or commodity price when markets have changed significantly.

Because annual indexes are actually averages of twelve monthly indices, the same data may be used as a basis for comparison on a monthly or on quarterly basis using a three-month average of the same index. The advantage of doing so is that the Crown stumpage rate will be adjusted based on the previous annual average, after the first three months of a new indexing year, and every three months thereafter. The only difficulty may be the availability of the index for the last month of the previous (reference) quarter. Figure 5.1 demonstrated how quarterly adjustments can more

closely follow market conditions, as compared to the annual indexing method that only reacts to the general change of the previous year.

Recommendation – That adjustments to Crown softwood stumpage values be implemented on a quarterly basis for each of the softwood product groups (pulpwood, studwood and sawlogs).

Benefits:

- The quarterly downward adjustments provide more prompt relief than annual adjustments and upward adjustments generate increased and prompt recovery.
- The Crown stumpage rate is set within three months of any market changes: this reduces likelihood of stumpage rates and markets evolving in opposite directions for a prolonged period of time (e.g. an entire year).

Disadvantage:

- As markets fluctuate, stumpage rates will predictably change with them. This may lead some operators to attempt to concentrate wood deliveries in a quarter that provides them with more favorable stumpage rates.

Recommendation - That a proportion of the annual allocation volume be pre-assigned to each quarter based on typical operating patterns and wood deliveries.

Recommendation – That Crown stumpage be collected using the quarterly adjusted rates applied to the predetermined quarterly volumes assigned as recommended above.

6.6 Administration

Accounting, Scaling and Measurement

At present, weight scaling of wood is the most common means of measuring wood volumes for commercial transactions in the logging and trucking service sectors. However, weight scaling is not specifically recognized within the current License Agreements. This necessitates the management of many different conversion factors that are currently determined by the receiving mill. Both weight and solid volume (e.g. m^3) measures offer the simplest and most widely accepted measures of wood volume. The Province needs to set a standard method for scaling all Crown wood. As mentioned previously (in Section 6.4), a new grade or product would represent such a small portion of the total volume in a bulk (weight) system, that scaling it would be inordinately costly to administer.

Recommendation – That the Province adopt a solid cubic meter policy for all Crown wood, and that the Province put in place a standardized list of conversion factors (to m^3) for rendering apparent volume and weight measures to a solid volume i.e. cubic metre.

Benefits:

- This simplifies and standardizes the reporting systems for both the beneficiary and DNR, which helps to eliminate confusion generated by the use of multiple conversion factors for one product.

Recommendation – Alternatively where weight scaling occurs, the Province could maintain a randomized check scaling procedure. This would involve having the scaler at each of the receiving mills determine the conversion factor (weight to m^3) for each Crown harvest block with DNR staff monitoring the process through regular verification. Checks should occur at each mill, once per season.

Benefits:

- Provides the Province with a wide range of samples that can be used for comparison purposes at all times of the year and to maintain representative standards.
- Check scale data may provide useful background data for forest management purposes (e.g. stem analysis – average volume per tree by diameter).

Recommendation – where volume scaling occurs, every full-time licensed scaler should be check scaled by NSDNR at least once a year.

Benefits:

- Provides full-time scalers with an annual verification of their practices and accuracy.

Silviculturally treated stands

Lower operating costs can be expected to be associated with stands that have been treated under a silviculture program. This is due to higher volume yields per hectare, uniform tree size, shape, grade of wood and the proximity to pre-existing roads. The feasibility of obtaining premium stumpage rates for such wood needs to be investigated.

As presented earlier in this section, the forest sector does not specifically recognize, or have an exclusive rate for such stands at this time.

Recommendation –That the Province monitor FMV prices every five years to detect any market acceptance or recognition of products from silviculturally treated stands.

7.0 IMPLEMENTATION

The Costs of Implementation and Administration

Proposed changes should be amenable to implementation without incurring excessive administrative cost on the part of the Crown. The use of a pilot project should moderate the impacts of implementing the changes, reducing the initial costs and allowing both government and industrial participants the opportunity to "ease" into the new system.

Tenure of Wood Supply

Long-Term License Holders

Re-assigning the unused portions of long-term license holder's AAC should be explored over the next year. The intent is to not affect the long-term rights of the beneficiary, but to capture the "unused" wood volume. Some cost recovery can be expected as more of the available wood volume is captured, thereby generating an increase in the stumpage fees paid to the Province. In AGFOR's opinion, capturing more of the wood volume, which is already part of the current AAC, into the system will likely reduce the consumptive pressure on the remaining Crown forest resource.

Volume Utilization Agreements

Establishing one, two, or three Crown Land bases to be managed by a group of several beneficiaries will require that both parties (DNR and the beneficiaries) fully understand what the management forest management obligations will be, before any commitment can be made. The IRM process is now in the second phase of public hearings and it will take two to three years before the consequences of this process are tabled.

Year 1 – Actions

- Review the un-licensed Crown Lands to determine a suitable land base that offers both forest management opportunity and an economy of scale;
- Undertake discussions with potential beneficiaries as soon as possible. This will allow DNR to better evaluate the composition of the group of new beneficiaries;
- Involve the beneficiaries in restructuring the current agreements;
- Formulate the preliminary eligibility criteria and the management and silviculture obligations to be met by beneficiaries.

Year 2 - Actions

- Involve industry beneficiaries in a silviculture pilot project on the defined Crown Land base;
- Assign harvest blocks to beneficiaries and monitor the resource utilization between beneficiaries.

Year 3 - Actions

- Involve the beneficiaries in a second review and, if necessary, restructuring of the agreement. Using a pilot project could allow for a Crown Land base to be managed by the Crown, in tandem with a group of beneficiaries, for five years, on a trial basis. This would allow DNR to gain a "first hand" appreciation of the proposed operation and the costs and problems associated with this format.

Stumpage Rates

There are three components to implementing changes to the stumpage rates:

1. Introducing the new baseline stumpage values, management/overhead costs and silviculture contributions;
2. Introducing the quarterly adjustments process;
3. Selecting the appropriate forest product indices.

Year 1 - Actions

- Update the new Crown baseline stumpage values using the FMV from the reference period (July – Nov. 1999) and the indices. Implement them on April 1, 2001 in the same manner that Crown stumpage has been updated in the past;
- Select appropriate indices and use the previous year as the reference year;
- Initiate the indexing at the beginning of the next fiscal (2001-2002) year using quarterly adjustments;
- There are initial start up costs and subsequent administrative costs that will be incurred annually or quarterly.

Year 3 – Actions

- Review the costs associated with new tenure arrangements. The real value of these costs will only become evident once the details of the agreement have been worked out between the Crown and the beneficiaries;

Years 5 – Actions

- Undertake an independent review of:
  - Private land stumpage values. Re-establish a new baseline or Fair Market Value (FMV) for standing timber on private lands in Nova Scotia;
  - Stumpage values for an extended range of products to detect any market acceptance or recognition of specialty grades and underutilized species;
  - Private land stumpage values for silviculturally treated stands to detect any market acceptance or recognition for products of those stands.

- Adjust the Crown stumpage rates, taking into consideration management and silviculture costs, in order to achieve parity with Fair Market Value (FMV) for standing timber on private lands in Nova Scotia.

8.0 SUMMARY

The Nova Scotia Department of Natural Resources had set several objectives to be met by this review. First and foremost was to assess the current methods of assigning and updating stumpage rates on Crown Lands to ensure that they met the requirements of achieving parity with the cost of wood on private lands (FMV), that they were relevant to current market conditions, and that they were practical to administer. The Province's current methods of updating their stumpage rates have consistently led to a situation where the stumpage rates are not representative of the current market conditions. AGFOR Inc. has recommended that Nova Scotia begin making the indexing and rate adjustments on a much narrower time frame. Doing so would add flexibility to the indexing system and ensure that the adjustments to stumpage rates occur much closer (in time) to the market conditions that influenced them. The province should also consider updating the baseline FMV for private wood on a regular basis. FMV will change with local market fluctuations. Changing forest management obligations on Crown Lands will mean changing costs to Licensees that also must be accounted for when setting Crown stumpage rates.

Nova Scotia should consider changing the terms of the VUA's if they wish to address the utilization and fiscal concerns associated with Crown Lands in the province. By adopting a New Brunswick- or Quebec-format allocation system, NSDNR could put much of the administrative and financial obligations (currently borne by the Province) of forest management onto industry. Reducing the Province's direct role to that of adjudicating and monitoring the forest management process is a cost effective means of attaining the full utilization and proper management of Nova Scotia's forest resources while respecting the full range of forest values held by the people of Nova Scotia. Utilization of the timber resource may also be improved if the Province were to consider a temporary re-allocation of under-utilized AAC from the long-term licenses to another beneficiary.

Implementing changes to Nova Scotia's forest resource management system will likely require significant front-end costs for both the Province and for industry. A pilot project, implemented over a definitive time frame, gradually introducing the full range of alterations would help mitigate these costs and distribute them over time. Additional benefits would be gained by allowing government and industry time to adapt to the changes and for problem areas to be identified and dealt with as they arise.

Document List for Nova Scotia

Document #:	Title	Creator/Publisher	Publish. Date
NS1	*Forestry - A New Policy for Nova Scotia*	*Government of Nova Scotia*	1986
NS2	*Trees for Tomorrow's Jobs* *Long Term Strategic Plan for the Use of the Forest Based Resources of Cumberland County*	*Cumberland Forestry Adjustment Committee*	1992
NS3	*Canada/Nova Scotia Forest Resource Development Agreement - An Overview*	*Forestry Canada* *NS Department of Lands & Forests*	1982 -1989
NS4	*Nova Scotia Legislation 1*		1997
	-Environment Act	*Government of Nova Scotia, Chapter 1 of the Acts of 94-95, Printed & Published by Queens Printer*	1997
	-Air Quality Regulations	*Government of Nova Scotia, OIC 95-294, Nova Scotia Reg. 55/95, Printed and Published by Queens Printer*	1997
	-Environmental Assessment Regulations	*Government of Nova Scotia, OIC 95-221, Reg 27/95, Printed & Published by Queens Printer*	1997
NS5	*Nova Scotia Legislation 2*		1997
	-Forests Act	*Government of Nova Scotia, Chapter 179 for the Revised Statutes, 1989 amended by 1992, c.18*	1997
	-Scott Maritimes Ltd. Agreement	*Government of Nova Scotia, Chapter 415 (1965) Act. 1965, c.15, s.1*	1997
	-Stora Forest Industries Limited Agreement Act	*Government of Nova Scotia, 1958, C.9, S.1*	1997
	-Fire Prevention Act	*Government of Nova Scotia, Chapter 171 of the Revised Statutes, 1989 as amended 1992, c.8, s.29*	1997
	-Forest Enhancement Act	*Government of Nova Scotia, Chapter 178 of the Revised Statutes, 1989 s amended 1993, c.9, s.6*	1997
	-Scalers Act	*Government of Nova Scotia, Chapter S-5, cited as R.s>W.S., 1967, Chapter 277*	1997
	-Wildlife Act	*Government of Nova Scotia, Chapter 504 of the Revised Statutes, 1989 amended 2990, C.50*	1997
	-Occupational Health and Safety	*Government of Nova Scotia, Bill No. 13, Chapter 7, Acts 1996*	1997

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Document #:	Title	Creator/Publisher	Publish. Date
NS6	*Nova Scotia Hardwood inventory*		1995
NS7	*Forests Act*	*Government of Nova Scotia, Chapter 179 of the Revised Statutes, 1989 amended 1992, c.18: 1998, c.18, s.559*	1989(2000)
NS8	*Forest Enhancement Act*	*Government of Nova Scotia; Chapter 178 of the Revised Statutes, 1989 amended 1993, c.9, s.6*	1989(2000)
NS9	*Natural Products Act*	*Government of Nova Scotia; Chapter 308 of the Revised Statutes, 1989 amended 1994-95, c.13*	1989(2000)
NS10	*Natural Resources Advisory Council Act*	*Government of Nova Scotia; Chapter 9 for the Acts of 1993*	1993(2000)
NS11	*Scaler's License*	*NS Dept. of Business and Consumer Services; NS Dept. of Natural Resources*	2000
NS12	*Crown Lands: Sales of Wood Products Under $200, Letter of Authority*	*NS Dept. of Business and Consumer Services; NS Dept. of Natural Resources*	2000
NS13	*Auctioneers, Pedlars, Hawkers & Traders of Goods Permit*	*NS Dept. of Business and Consumer Services, NS Permits Directory*	2000
NS14	*Crown Lands Act*	*Government of Nova Scotia; Chapter 114 of the Revised Statutes, 1989*	1989(2000)
NS15	*Regulations Respecting Registration and Statistical Returns*	*Made Pursuant to Section 40 of Chapter 179 of the Revised Statutes of NS, 1989 the Forests Act.*	1989(2000)
NS16	*The Economic Impact of The Forest Industry on the Nova Scotia Economy*	*Atlantic Provinces Economic Council*	2000
NS17	*Nova Scotia Land Tenures: A Review of Stumpage, Forest Management and Market Access*	*FLC Reed; Vancouver, BC*	1987
NS18	*Scaler's Act*	*Government of Nova Scotia; Chapter 411 of the Revised Statutes 1989*	1989

Document #:	Title	Creator/Publisher	Publish. Date
NS19	*Primary Forest Products Marketing Act*	*Government of Nova Scotia; Chapter 355 of the Revised Statutes, c. 355, c. 1*	1989
NS20	*Overview of Wood Sustainability Regulations - (for Registered Buyers)*	*Government of Nova Scotia, NS Dept. of Natural Resources*	1999
NS21	*DRAFT - Forest/Wildlife Guidelines and Standards for Nova Scotia*	*Government of Nova Scotia, NS Dept. of Natural Resource*	1999
NS22	*Sustainable Forestry Fund Background Discussion Paper*	*Government of Nova Scotia, NS Dept. of Natural Resource*	1999
NS 23	*Minutes of The 29th Meeting of the CSA Committee on Scaling of Primary Forest Products*	*CSA Committee on Scaling of Primary Forest Products, Edmonton, AB*	1997
NS24	*Minutes of The 30th Meeting of the CSA Committee on Scaling of Primary Forest Products*	*CSA Committee on Scaling of Primary Forest Products, Rapid City, South Dakota, USA*	1998
NS25	*Minutes of The 30th Meeting of the CSA Committee on Scaling of Primary Forest Products*	*CSA Technical Committee on Scaling of Primary Forest Products, Corner Brook, NFld*	1999
NS26	*News, Notes and Changes*	*Madison's Canadian Lumber Reporter, May 1999*	1999
NS27	*Softwood Lumber Update*	*Attachment to letter's from Canadian Embassy and United States Department of Commerce*	1997
NS28	*Article: Wood Products; North American lumber market remains steady*	*Pulp & Paper Week, April 24, 2000*	2000
NS29	*AGFOR Proposal to NSDNR*	*AGFOR Inc.*	2000
NS30	*AGFOR/NS Contract*	*Government of Nova Scotia, Minister of Natural Resources*	2000

Document #:	Title	Creator/Publisher	Publish. Date
NS31	*NS Stumpage Survey RFP*	*#60066577 To conduct a Review and Provide Recommendations on the Valuation Allocation and Sale of Crown Timer Resource, Government of Nova Scotia, Department of Finance, Procurement Branch*	2000
NS32	*MAP- Crown Lands (with Natural Landscape Boundaries) Halifax and Hants Counties*	*Government of Nova Scotia, Dept. of Natural Resources*	
NS33	*Managing Natural Resources on Crown Lands; An Overview of Eastern Region (Pictou, Guysborough, Antigonish, Victoria, Inverness, Cape Breton and Richmond counties)*	*Government of Nova Scotia, Dept. of Natural Resources, Eastern Region*	1998
NS34	*Managing Natural Resources on Crown Lands; An Overview of Halifax & Hants Counties*	*Government of Nova Scotia, Dept. of Natural Resources, Central Region*	1997
NS35	*Overview of Crown Lands in Cumberland and Colchester Counties - Public Consultation Paper*	*Government of Nova Scotia, Dept. of Natural Resources, Bible Hill, NS*	1996
NS36	*Managing Natural Resources on Crown Lands; An Overview of Western Region (Annapolis, Digby, Kings, Lunenburg, Queens, Shelburne and Yarmouth counties)*	*Government of Nova Scotia, Dept. of Natural Resources, Western Region*	1998
NS37	*Goals and Objectives for the Management of Provincial Crown Resources, Appendix D*	*Prep. By the Government of Nova Scotia, Department of Natural Resources Integrated Resource Management/Land Use Committee for Regional IRM Planning Processes.*	1997
NS38	*U.S./ Maritime Provinces Exclusion Agreement*	*Correspondence between United States Department of Commerce and the Canadian Embassy*	1996
NS39	*NS Pricing Statistics - Diskettes*		1994 - 2000
NS40	*NS Wood Supply- Forecast for NS 1996-2070*		

Document #:	Title	Creator/Publisher	Publish. Date
NS41	*Provincial Crown Lands..... 1996*		1996
NS42	*Provincial Crown Lands..... 1997*		1997
NS43	*NS Stumpage List 2000*		2000
NS44	*NS DNR Stumpage Price Adjustments (2 copies)*	*Government of Nova Scotia, Department of Natural Resources*	2000
NS45	*Lumber Stats*	*Peter MacQuarrie, NS Dept. Of Natural Resources*	2000
NS46	*Analysis of Impact of 12 month...*		2000
NS47	*Forest Arcade Price List*	*Multiple Vendors from Western Region of Nova Scotia*	2000
NS48	*Price Adjustments for Upset Tender Prices*	*Government of Nova Scotia, Dept. of Natural Resources*	2000
NS49	*Product List*	*Government of Nova Scotia, Dept. of Natural Resources, Renewable Resources Branch*	2000
NS50	*Conversion Factors*	*Table*	2000
NS51	*Table 6. Crown Land Forest Management Table*		1997
NS52	*Regulations Respecting Wildlife Habitat Management*	*Made Pursuant to Chapter 179 of The Revised Statutes of Nova Scotia, 1989, the Forests Act*	1998(2000)
NS53	*Generic Company Contract - 10 yr Tenure*	*Government of Nova Scotia, Dept. of Natural Resources*	1999
NS54	*Generic Company Contract - Short-term Tenure*	*Government of Nova Scotia, Dept. of Natural Resources*	2000
NS55	*Letter of Authority for Standing Wood*	*Government of Nova Scotia, Dept. of Natural Resources*	2000

Document #:	Title	Creator/Publisher	Publish. Date
NS56	*Primary Forest Products Conversion Factors*	*Government of Nova Scotia, Dept. of Natural Resources*	2000
NS57	*Stumpage Tender Samples*	*Various Vendors*	2000
NS58	*Sample - Proposed DRAFT - Crownland License Agreements*	*Ledwidge Lumber Co. Ltd.*	2000
NS59	*Sample - Kimberly-Clark License Agreement*	*Government of Nova Scotia, Dept. of Natural Resources*	1997-2000
NS60	*Registry of Buyers 1998, Report on Primary Forest Products Acquired and Business Summaries*	*Government of Nova Scotia, Minister of Natural Resources*	1998
NS61	*NS Code of Forest Practice DRAFT*	*Government of Nova Scotia, Department of Natural Resources*	2000
NS62	*DRAFT - Forest/Wildlife Guidelines and Standards for Nova Scotia*	*Government of Nova Scotia, Dept. of Natural Resources*	1999
NS63	*DRAFT - Regulations respecting wildlife habitat management*	*Made pursuant to Chapter 179 of the Revised Statutes of Nova Scotia, 1989, the Forests Act*	1999
NS64	*Planning and Research Topics; Nova Scotia's Old Growth Forests*	*Government of Nova Scotia, Dept. of Natural Resources - Web Page*	2000
NS65	*Maritime Lumber Bureau List*	*Maritime Lumber Bureau, Amherst*	2000
NS66	*Nova Scotia, Department of Natural Resources, Phone List*	*Government of Nova Scotia Web Page*	2000
NS67	*AGFOR Letter of Introduction*	*Government of Nova Scotia, Dept. of Natural Resources*	2000
NS68	*Nova Scotia List of Sawmills*	*Government of Nova Scotia, Dept. of Natural Resources, Except from Registry of Buyers*	1998

Document #:	Title	Creator/Publisher	Publish. Date
NS69	*List of Lumber Indices - CFS*	*Canadian Forest Service, Industry, Economics and Programs*	2000
NS70	*Prince Edward Island, Department of Agriculture and Forestry, Phone List*	*Government of Prince Edward Island Web Page*	2000
NS71	*Newfoundland, Department of Forest Resources and Agrifoods, Phone List*	*Government of Newfoundland and Labrador Web Page*	2000
NS72	*Sample Scott Maritimes Contract*		1965
NS73	*Memorandum Metric Log Scaling*	*Crated by Alton Sutherland, NS Department of Natural Resources*	1998
NS74	*Nova Scotia Dept. of Natural Resources Manual Licenses, Leases and Permits*	*Government of Nova Scotia, Dept. of Natural Resources*	1984
NS75	*GP Price List*		2000
NS76	*"Charting the Course": The Framework of Program Analysis*	*Government of Nova Scotia, Communications NS*	2000
NS77	*"Strong Leadership....a clear course"*	*Government of New Brunswick*	2000
NS78	*Newfoundland Stumpage and Royalties*	*Newfoundland Forest Service, Dept. of Forest Resources and Agrifoods*	2000
NS79	*National Post Article: Canada/U.S. Lumber Agreement*		2000
NS80	*Collective Agreement Between Stora Port Hawkesbury Limited and Nova Scotia Landowners and Forest Fibre Producers Association*		1998

INTERJURISDICTIONAL COMPARITIVE VALUES BASED ON 1999

	NS NS Crown Long Term Agreements	10 Year Volume Based Agreement	NB Crown Licensee	NB Crown Sub-Licensee	PEI	NFLD Crown Industrial Private Land	NFLD Crown Permitee
Number of Beneficiaries	2	22	10	65	4	3	30,000+
Form	Long-term land based	10 year volume based	25 year volume based	5 year volume based	Tender sale	99 year area lease	1 year volume based
Volume Allocated m^3 solid *(estimated)*	837,053	354,534	2,142,810	3,076,645	Varies	1,500,000	1, 050,000
Importance of Public Wood	Wood is delivered in chips from wood exchanges with sawmills (10%) + round wood (20%)	Wood exchanges with Long-term agreement holders is an important supply of wood	Wood exchanges with Licencees/ pulp mills is an important supply of wood	Wood exchanges with Licencees/ pulp mills is an important supply of wood	Not Significant	High	High
Importance Allocation (%)	21%	3% to 10%	25%	25%	Na	59%	39%
Renewal of Allocation (years)	50 years	10 years	• 25 year maximum • A performance evaluation is conducted every five years • An additional five years is added if accepted	5 years	Na	Up to ninety-nine years, under review	1 year
Basis of Review	Compliance with agreement		• Performance review with pre-established criteria • Value added initiatives • Harvest of allocation • General compliance with industrial plan	Value added initiatives; Harvest of allocation and general compliance with industrial plan	Na	Unknown at this time	Comply with terms and conditions of permit

	NS NS Crown Long Term Agreements	10 Year Volume Based Agreement	NB Crown Licensee	NB Crown Sub-Licensee	PEI	NFLD Crown Industrial Private Land	NFLD Crown Permitee
Conditions/Costs	Forest Mgmt Plan 45years, Management Cutting Plan(1year), Road Building/ maintenance, Scaling and Admin, NOTE: Budworm Salvage has reduced the harvest and delayed the planning process which is under development.	Operations Planning (5year), Operations Planning (1year), Road Building/ maintenance, Scaling and Admin, NOTE: Most beneficiaries rely on DNR for the planning components.	Forest Mgmt. Planning every 5years, Operations Planning (1year), Road Building/ maintenance, Scaling and Administration, Forest Inventory Information, Restocking Silviculture, Basic Silviculture, Enhanced Silviculture, Forest Protection	Forest Mgmt. Planning, Operations Planning (5year), Operations Planning (1year), Road Building/ maintenance, Scaling Enhanced Silviculture, Forest Protection	Nil	Shared Forest Mgmt. Planning and Silviculture shared with the Province, Scaling & Admin, Forest Protection, Roads	Permit Fee
Stumpage/Royalties							
Principal	Long-term agreement	Parity with private land wood	Parity with private land wood	Parity with private land wood	Parity with private land wood	Area rates	
Basis of Valuing / Review	Evolution of agreement and indices	Fair Market Value Private Lands and Indexing	Fair Market Value Private Lands: reviewed every 5years and discounted by Overhead Costs	Fair Market Value Private Lands: reviewed every 5years and discounted by Overhead Costs	Upset price per unit area tendered based on local knowledge of Fair Market Value	Taxes	Annual indexing
Frequency of Adjustments	10 year adjustments as per Agreement and annual indexing	Annual adjustment by indices	• Reviewed every 5 years • Annual review of indices • Adjustment if indices surpass historical highpoint	• Reviewed every 5 years • Annual review of indices • Adjustment if indices surpass historical highpoint		Tax set annually	Annual indexing

	NS NS Crown Long Term Agreements	10 Year Volume Based Agreement	NB Crown Licensee	NB Crown Sub-Licensee	PEI	NFLD Crown Industrial Private Land	NFLD Crown Permitee
Indices and Price Indicators Utilized	For pulpwood only: Statistics Canada: Bleached Woodpulp, Sulphate Softwood (P2538); Statistics Canada: Newsprint Paper Export (P2552); Woodpulp, Sulphite Bleached (P2542); Pulp and Paper Weekly: Supercalendered A (SC-A)	Indexed to the Atlantic Canada Lumber Index: For Softwood Sawlogs Statistics Canada: Softwood Lumber Atlantic (Canada) (P2443); For Hardwood Sawlogs: Hardwood Lumber and Ties (P2439); For Pulpwood: NS Pulp & Paper Index: weighted Bleached Woodpulp, Sulphate Softwood (P2538); Newsprint Paper Export (P2552); Woodpulp, Sulphite Bleached (P2542); Pulp and Paper Weekly: Supercalendered A (SC-A)	SWD Madison's Canadian Lumber; HWD Hardwood Lumber Report; Pulp & Paper Weekly	SWD Madison's Canadian Lumber; HWD Hardwood Lumber Report; Pulp & Paper Weekly	Local Market Driven	NFLD Forest Service calculates using the costs of forest protection (including administration)	Statistics Canada: Newsprint Paper Export (P2554), Lumber Softwood East of the Rockies (P2464), an implicit price index of government goods and sevices.
1999/2000 Crown Stumpage Rates: $/m³ Solid							
Softwood Pulp	$5.37	$4.93	$8.46	$8.46	Tender on a per hectare basis	Nil	$3.52
Softwood Studwood	$10.32	$10.32	$13.51	$13.51	Tender on a per hectare basis	Nil	$4.56
Softwood Sawlogs	$13.50	$13.50	$13.51	$13.51	Tender on a per hectare basis	Nil	$4.56
Hardwood Pulp	$3.82	$4.62	$5.86	$5.86	Tender on a per hectare basis	Nil	na
Hardwood Sawlogs	$17.38	$17.38	$13.57	$13.57	Tender on a per hectare basis	Nil	$4.56

	NS NS Crown Long Term Agreements	10 Year Volume Based Agreement	NB Crown Licensee	NB Crown Sub-Licensee	PEI	NFLD Crown Industrial Private Land	NFLD Crown Permitee
Costs							
Forest Management/ Overhead[1]	$4.67	$2.13	$4.67	$4.67	$0.00	$11.04	
Other Costs[2]	$0.00	$0.00	$1.59	$1.59	$0.95	$1.90	$7.85
Effective Stumpage Rate[3]:							
Softwood Pulp	$10.04	$7.06	$14.72	$14.72	Tender on a per hectare basis	$12.94	$11.37
Softwood Studwood	$14.99	$12.45	$19.77	$19.77	Tender on a per hectare basis	$12.94	na
Softwood Sawlogs	$18.17	$15.63	$19.77	$19.77	Tender on a per hectare basis	$12.94	$12.41
Hardwood Pulp	$8.49	$6.75	$12.12	$12.12	Tender on a per hectare basis	na	na
Hardwood Sawlogs	$22.05	$19.51	$19.83	$19.83	Tender on a per hectare basis	$12.94	$12.41

1. Forest Management/ Overhead Costs include: road planning, construction and maintenance; forest management and operations planning; wood supply accounting and scaling and administration.
2. Varies by Province and tenure.
3. Includes the Forest Management and Overhead costs.